IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1/2005

..... Petitioner.

Versus

1. The state of Goa through its
Chief Secretary,
Secretariat, Porvorim, Goa.

2. Secretary, P.W.D.,
Government of Goa,
Secretariat, Porvorim, Goa.

3. State Pollution Control Board,
at Patto, Panaji, Goa.

4. The Central Pollution Control Board,
New Delhi.

..... Respondents.

Mr. S. S. Kantak, Advocate General with Mr. M. Salkar, Addl. Govt. Advocate for respondents No.1 and 2.

Mr. A. N. S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for respondent No.3.

Mr. J. A. Lobo, Advocate for respondent No.4.

CORAM :- S.J. VAZIFDAR &
U.D. SALVI, JJ.

Date of reserving the Order : 21/04/2010

Date of pronouncing the Order : 28/04/2010

ORAL ORDER : (Per S.J. VAZIFDAR, J.)

The above writ petition was registered suo motu on the basis of an editorial captioned "Rain and Dry Taps", published in the edition of 24th March, 2005 of "The Navhind Times". As recorded in an order dated 5th April, 2005, the editorial indicates that the people in Goa do not get adequate drinking water despite abundant rain fall every year. The editorial stated that the P.W.D. Secretary admitted that about 34 per cent of water was lost due to leaking taps and pipes, and tanks overflowing. Other newspapers also carried similar articles.

Recognizing that the right to unpolluted drinking water falls within the ambit of 'Right to Life', the Division Bench issued notices to the State of Goa, Chief Secretary and the Secretary, P.W.D., and directed them to file affidavits, dealing with four aspects stated therein, in connection with the supply of drinking water and the steps taken by the authorities to provide the same, as also the steps taken to avoid wastage thereof.

2. The Division Bench appointed Mrs. Norma Alvares as an amicus curiae.

Before going further, we would like to express our appreciation for the efforts and dedication of the learned amicus curiae, Mrs. Alvares. Without her assistance in the matter, the task of this Court in redressing the prolems, would have been considerably greater. The scope of the petition has increased considerably. No efforts have been spared by the learned amicus curiae in meeting the various aspects that arose from time to time. We must also express our appreciation to the parties and to the learned Advocates appearing on their behalf for having, by and large, addressed the issues in public interest, rather than treating them as merely any other adversarial proceedings.

3. By an order dated 3rd May, 2005, the Goa State Pollution Control Board was impleaded as respondent No.3.

4. Affidavits were filed pursuant to the above orders. As recorded in an order dated 11th July, 2005, the Principal Engineer, P.W.D., stated that the cause of wastage of water was referred to a survey by M/s Mott MacDonald and referred to the Government's proposal to instal the Supervisory Control and Data Acquisition

Systems for the Opa Water Supply. It is further stated that the Government has introduced a helpline to deal with the grievances, operated by an independent agency.

5. The orders indicate that the learned amicus curiae raised several important points during the course of the hearings, which were required to be addressed to by the authorities. These include the Government's stand on rain water harvesting, formulation of the policy for industrial siting on river banks, classification of areas in Goa under the Goa Ground Water Regulation Act, and the policy of identifying the non-working meters.

6. The issue of registration of water tankers with regard to transportation of ground water was also raised.

7. Pursuant to the above, reports were filed in this Court, from time to time, regarding the steps taken by the respondents in respect of the above issues. One of the important directions was to the Goa State Pollution Control Board (GSPCB) to place on record the steps taken by it for the purpose of implementation of the

environmental atlas of Goa, zonal atlas for siting industries and industrial siting guidelines of Goa, as approved by the Central Pollution Control Board, from time to time. Time was sought on various occasions to take a decision on the siting of industries.

8. By an order dated 6.7.2009, the Division Bench, recorded the statement on behalf of the Advocates for all the parties that the only issue left pertained to zoning requirements of siting of industries on river banks. Before referring to the rest of the orders, it is necessary only to state that even before us, the learned Advocates made a statement that all the other issues had been substantially addressed to during the course of this petition. It is, therefore, not necessary for us to refer to the other issues, in any detail. The learned amicus curiae has submitted a note summarizing the same, which we take on record and mark "X". Suffice it to state that amongst the steps taken are the establishment of a water supply helpline, the setting up of a Supervisory Control and Data Acquisition System, replacing of leaking pipes in several Talukas and the repairs and replacement of defective meters which is expected to be completed by January, 2011, the disconnection of public taps and the provision of free water

connections to the families belonging to below poverty line category, setting up of additional water treatment plants, execution of a tripartite agreement between the Government of Goa, Government of India and the Government of Japan in respect of major water supply projects and the implementation of the Goa Ground Water Regulation Act, 2002.

10. By an order dated 28.1.2010, the Division Bench recorded the learned Advocate General's statement that the guidelines for siting of industries on river banks, submitted by the GSPCB had been accepted, in principle by the Government and are sought to be incorporated in the Regional Plan which is awaiting final approval of the Government. The learned Advocate General further stated that the guidelines were being followed for permitting the new industries on river banks. However, the old guidelines are being followed as far as expansion, modification, and diversification of the existing industries are concerned. Even in respect thereof, EIA clearance is insisted upon, wherever required.

Mrs. Alvares submitted that the Government ought to follow the siting guidelines even in cases of existing industries which seek to expand, modify or diversify their activities. The Division

Bench stated : "In case the siting guidelines have been accepted by the Government, we see no reason why the Government should not follow them even in case of expansion, modification or diversification of existing industries". The learned Advocate General sought time to take instructions in this regard.

11. The "Guidelines for Siting of Industries" for North Goa and South Goa by the GSPCB have been filed in the Court. The question that now remains is whether the same ought to be applied not merely in respect of new industries, but also in respect of expansion, modification and diversification of the existing industries.

12. (A) In this regard, Mrs. Alvares invited our attention to paragraphs 3.3 of the Guidelines for Siting of Industries. Air polluting industries have been categorized into four categories A1, A2, A3 and A4. The impact potential of these categories of industries is stated to be more than 7 kms., 5 to 7 kms., 2 to 5 kms. and less than 2 kms., respectively. Water polluting industries are classified under four categories W1, W2, W3 and W4, in respect whereof the impact potential is stated to be very high, high, medium to high and low,

respectively. The impact potential is based upon certain technical parameters mentioned in the guidelines. The impact potential on air and water of each industry may vary. For instance, a given industry may fall within the category "A1" in respect of air pollution, but, in category "W2" in respect of water pollution.

(B) Ms. Alvares, then drew our attention to paragraph 3.3 which contains a table, indicating air pollution and water pollution in respect of 32 industries. This table is followed by a further table consisting of 19 industries. These 19 industries are at Sr. Nos. 14 to 32, in the previous table. The guidelines state that there is a possibility of finding a few suitable sites, for those of these 19 industries that install state of the art manufacturing process and/or best available treatment technology for wastes/effluents/emissions.

(C) In other words, in respect of first 13 industries mentioned in the first table, the guidelines do not refer to a possibility of finding suitable sites for them, even if they install state of the art manufacturing process and/or best available treatment technology for wastes/effluents/emissions. These are extremely high polluting

industries. All of them fall within the category "W1" i.e. they are considered to have a high impact potential on water pollution. The first 5 of them also fall within the category "A1" i.e. they have an air pollution impact potential over 7 kms. The next 5 fall within the category "A2" i.e. they have an impact potential on air pollution to the extent of 5 to 7 kms. The eleventh industry falls in the category "A3" i.e. they have an impact potential on air pollution of 2 to 5 kms. and the 12th and 13th industries fall within the category "A4" i.e. they have an impact potential on air pollution within 2 kms. The first 13 industries have a very high impact potential on water pollution.

The guidelines in paragraph 3.3.3 clarify that the recommendations for the other 19 industries do not apply even if they fall under zones found to be suitable for industrial siting in or in the immediate vicinity of the urban areas/settlements.

13. The respondents' stand on this aspect of the matter is summarized in paragraphs 6 and 7 of an affidavit dated 6.7.09 of one Sanjit Rodrigues, the Director of Industries, Trade and Commerce, Government of Goa. The affidavit was filed to convey the Government's stand on the suggestion made by the GSPCB.

Paragraphs 4 to 7 of this affidavit, read as under :

" 4. I say that the Government is in the midst of finalizing Regional Plan 2021 for Goa. Draft Regional Plan has already been prepared and the same has been notified for public objections. The suggestions of the GSPCB contained in the said 2 documents are made a part of the Draft Regional Plan under item no.3.7.4 (h).

5. The suggestion of the Pollution Control Board therefore will be taken into consideration while finalizing Regional Plan 2021 for Goa.

6. I say that in the meantime and till the Regional Plan 2021 is not finalised, it is decided to follow the guidelines for citing of industries as submitted by GSPCB as far as granting permissions for new water polluting industries on river banks is concerned (Industry Category W1, W2 and W3 under item no.4.1 part C) of the Zoning Atlas submitted by GSPCB.

7. So far as proposal for expansion modification or diversification of existing industries on river bank, it is decided to adopt the existing

guidelines and procedure followed by Directorate of Industries Trade and Commerce besides insisting upon Environmental Clearance/EIA wherever required."

14. Mrs. Alvares submitted that in respect of the said 32 industries and in any event in respect of the first 13 of them, the Government ought to adopt the GSPCB guidelines, including with respect to expansion, modification and diversification of the existing industries on river banks. She invited us to pass this order at least till the Final Regional Plan is published.

15. We see the force in Mrs. Alvares's submission. It is possible, under the guise of expansion/modification/diversification, in fact to enable new industries to come up. For instance, it is possible, by adjusting equity participation, in effect, to set up a new industry by sanctioning a scheme of diversification. There would, thus, be a new owner and a new industry. If, ultimately, in the Final Regional Plan, the same is prohibited, it will be too late. On the other hand, the diversification can also be for a bona fide and genuine purpose, if it

is in fact only with a view to complement an existing activity and not an independent activity in itself and does not pertain to those carried on by the said 32 industries. In that event, such a diversification, prima facie, at least would not be objectionable per-se, provided, always, that the same does not, in any manner whatsoever, adversely affect the environment, including in respect of air and water pollution.

16. We see force in the contentions of the learned Advocate General, Mr. Nadkarni, the learned Senior Advocate appearing on behalf of the GSPCB that every expansion or modification does not necessarily affect the environment adversely. There can be expansion in production within the existing capacity by adopting a different technology. This again is provided the new method or technic does not have an adverse impact on the environment, in any manner. A modification may, in certain cases, even have a beneficial impact on the environment. A modification may be pursuant to a new technology, which is environment-friendly, or in any event, less hazardous to the environment than the existing technology. There is no warrant in such cases to bar the Government from even considering such applications.

17. The affidavit indicates the existing procedure for grant of approval of such applications. We would not be justified in proceeding on the basis that every application for expansion, modification or diversification would necessarily have an adverse effect on the environment. In any event, the safeguards that we intend providing in addition to those already existing would allay such apprehensions.

18. In the circumstances, the writ petition is disposed of by following order :

(I) The Writ Petition is disposed of by accepting the statements made and recorded in the earlier orders, as well as in terms of the orders and directions passed in this writ petition, from time to time, except as modified hereafter.

(II) The statements contained in the affidavit dated 6.7.09 and in particular, paragraph 6 thereof regarding new industries, are accepted.

(III) The proposals for expansion, modification and diversification of existing industries, on river banks, may be decided according to the existing guidelines and procedure followed by the

Directorate of Industries, Trade and Commerce, including by insisting upon Environmental Clearance/EIA wherever required. However, such applications shall be considered only in the event of the same not having any adverse impact on the environment whatsoever, including by way of air pollution or water pollution and the GSPCB issuing a certificate to that effect and filing the same in this Court.

(IV) Till the Final Regional Plan is prepared, every application for expansion, modification or diversification, shall be filed in this Court and intimation thereof shall be given to the learned amicus curiae Mrs. Norma Alvares thereof. Liberty to the learned amicus curiae to apply to this Court including in regard thereto, if necessary.

S.J. VAZIFDAR, J.

U.D. SALVI, J.

ssm.

Start

IN THE HIGH COURT OF BOMBAY AT GOA
AT PANAJI

CORAM: S.S. PARKAR & V.M. KANADE
DATE : 11th July 2005

This petition was entertained as Suo Moto W.P. on the basis of editorials in some of the newspapers of the State bringing to the notice of the public the leakage of water, which ultimately causes shortage of water supply to the citizens. Today an affidavit is filed on the Principal Chief Engineer, P.W.D. stating therein that the Unaccounted Flow of Water is mainly because of leaking joints and leaking pipes, where some of the pipelines are very old, practically 40 years old and the department is making all efforts to reduce the Unaccounted Flow of Water.

The Affidavit further states that one of the surveys conducted by M/s. Mott MacDonald indicates that 34% of the Unaccounted Flow of Water is due to non-revenue water and the Department is making efforts to reduce the same and bring it down to 20%-25%.

The Affidavit further states that the Government has already proposed to install Supervisory Control and Data Acquisition System for the Opa Water Supply and also to provide the same to Selaulim Water Supply schemes that are major water supply schemes of Goa, catering to 70% of water supply quantities. It is also stated in the Affidavit that the Government has introduced a Helpline to facilitate the grievances which is operated by an independent agency. The public can lodge any complaint in case of any leakage noticed by them. The said complaints are computerised, monitored and will be attended to on priority basis. The Resp. No. 2 also found that the water meters to the extent of 25% are not functioning. They are also one of the causes of Unaccounted Flow of Water. The Department is planning to take up the programme of repairs of non-working water meters.

In view of the above, it is felt desirable to adjourn the Writ Petition for a period of 6 months to enable the Respondent / Government to file further Affidavits showing the progress made in eliminating water leakage.

S.O. to 16th January 2006. In the meantime the Respondent / Government is directed to invite publicity to the Helpline meant for the public to lodge complaint in respect of leakages or any other problem with regard to the shortage of water supply noticed by them.

Stop

Matter kept for Jan' 2006

SUO MOTO W.P. 1/2005

Submissions

I. Steps taken/proposed to supply adequate drinking water in urban and rural areas.

(Government response - paras 3, 4, 9, 10)

(a) Affidavit does not disclose break-up of potable water supplied for domestic / industry (hotels, factories) use.

(b) Affidavit does not indicate total domestic demand and the extent to which supply falls short. (Newspaper reports demand as 303 MLD).

(c) Which areas fall short in summer and the extent of remedial measures. How many people require water in these areas and how many tankers of water are supplied.

II. Steps taken / proposal for supply of non-potable water

(Govt. response - para 5).

Affidavit does not indicate demand and whether supply is adequate.

III. Steps taken/proposed to avoid wastage and leakage.

(Govt. response - para 6).

(a) Affidavit gives the impression that there is only minor wastage/leakage whereas the newspaper reports PWD Secretary's estimate as 34%. This is neither confirmed or denied in affidavit.

(b) No dates are projected for implementation of steps proposed to be taken eg. SCADA system

IV. Steps for Proper Water Management.

(Govt. response - para 7, 8, 11).

(a) Affidavit deals with river water only. Groundwater is totally ignored. Groundwater Regulation Act, 2002 requires declaration of Scheduled/Water Scarcity/Over-exploited areas. Also Groundwater Officer to regulate water withdrawal to ensure water balance. This is especially important for coastal areas.

(b) State Pollution Control Board should inform whether river waters have been classified so as to protect potable sources of water.

(c) State Pollution Control Board should inform what steps are taken to maintain/improve quality of river water. Does Government have any policy on siting of industries/ prohibition of industrial activity on river banks?

(d) Are any measures for Rainwater Harvesting enforced for industries? for hotels? for housing complexes?

Ms. Norma Alvares
Amicus Curiae

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO.1 OF 2005

V E R S U S
STATE OF GOA
THROUGH ITS CHIEF SECRETARY
AND ANR. ... RESPONDENTS

Advocate Ms. Norma Alvares, Amicus Curiae.
Mr. S.S. Kantak, Advocate General with M. Salkar, Addl. Government Advocate for Respondent no.1 and 2.
Mr. J.A. Lobo, Advocate for Respondent no.4.
Mr. A.N.S.Nadkarni, Senior Advocate with Mr. J. Godhinho, Advocate for Respondent no.3.

Coram: N.A. Britto, J
U.D. Salvi, J
Date: 28th January, 2010.

P.C.:

Heard.

2. Shri Kantak, learned Advocate General submits that the guidelines for siting of industries on river banks submitted by the Goa State Pollution Control Board have been accepted in principle by the Government, but the said guidelines are sought to be incorporated in the Regional Plan which is awaiting final approval of the Government.

3. Learned Advocate General submits that the said guidelines are being followed for permitting new industries on river banks. Learned Advocate General further submits that as far as expansion, modification and diversification of the existing industries is concerned the old guidelines are being followed

insisting upon Environmental clearance/EIA wherever required.

4. Ms. Norma Alvares, Amicus curiae, submits that the Government ought to follow the siting guidelines, in case they have been accepted by the Government, in case of the existing industries, also whenever they seek for expansion, modification or diversification. In case the siting guidelines have been accepted by the Government, we see no reason why the Government should not follow them even in case of expansion, modification or diversification of existing industries.
5. To this the learned Advocate General seeks time to take instructions and make statement before this Court on the next date.
6. The Principal Chief Engineer has also filed Affidavit. The same be taken on record. The Affidavit discloses as to which of the projects taken up by the Government could not be completed, and, those which have been completed, projects for which time schedule was given earlier and could not be adhered to.
7. In compliance with our order dated 7.12.2009, the Principal Chief Engineer has filed his affidavit. In the said affidavit he has stated that the project of water augmentation by 50 MLD which was to be completed in the year 2008 will now be completed by July 2010. As regards the expert agency which was to be appointed to suggest remedial measures, as per his earlier affidavit, did not take oft at all. As regards failure of electricity at Assnora, the affidavit is almost silent. It is also

silent on the reported decision to purchase two generators to tide over electricity problem. In fact, it should be the endeavour of the Principal Chief Engineer to ensure that the reservoirs/overhead tanks lying furthest from Assnora should be filled first, and the closest, last. This to some extent will solve the problem arising from power failure.

8. Learned Amicus curiae Ms. Norma Alvares submits that the Government should make some arrangements for backup of electricity failure at the supply point i.e. at Assnora, so that in case there is failure of electricity, the pumps can be operated by generators. To that Shri Kantak submits that such a proposal has been examined by the Officers concerned and they have found it that is not feasible. Learned Advocate General submits that an affidavit to that effect will be filed.

9. After order dated 7.12.2009, the issue of inadequate water supply was raised in the Legislative Assembly on 15.12.2009 and it is reported on Herald dated 17.12.2009 that the reason given for water shortage in Bardez Taluka is mainly "increase in demand, insufficient raw water and electric power failure". The same newspaper shows that demand to stop issuance of licenses was made, but was not accepted. At our request, the Learned Advocate General has produced a copy of the reply given in the House and it inter alia shows that Porvorim, as against the requirement of 16.08 MLD gets only 14.30 MLD and Calangute as against the requirement of 4.80 MLD gets 4.27 MLD.

10. Learned Advocate General concedes that Calangute and

Porvorim towns are at the tail end and that is the reason why they experience difficulty in receiving regular water supply. Upon instructions from the concerned officers who are present the Learned Advocate General makes a statement that in those two areas, water will be regularly supplied at least for one hour per day by displaying the timings prominently at the concerned water reservoirs/overhead tanks, in normal circumstances.

11. We accept the statement and direct that the water be supplied at good pressure and one hour should be reckoned from the time the consumers get the water supply at the tail end from the reservoir concerned.

12. The learned Advocate General assures the Court that timings will be notified at the reservoir, so that the people of each locality know as to when they can get water supply. We accept the statement from the Learned Advocate General, as well, and, direct the Principal Chief Engineer to file an undertaking to that effect. We only hope that this arrangement is not at the cost of consumers of other Talukas.

13. After our order dated 7.12.2009, some residents of Porvorim Plateau by their petition dated 14.12.2009 have raised serious issues. A copy of the said petition, which is on file be given by the Registry to the learned Amicus Curiae as well as to the learned Advocate General. The said petition shall be registered as P.I.L. and notice given to the Petitioner no.1 to appear on the next date.

14. From the said petition it appears that some people are more equal than others in getting water supply in Porvorim area,

as many of them are directly supplied water from the main pipeline and not from the overhead tanks. In such a situation those who get supply from overhead tanks are bound to suffer.

15. We therefore direct the Chief Principal Engineer to conduct an inquiry and disclose to this Court as to how many such connections have been given over the years and name of the projects they serve. The Chief Principal Engineer is also directed to show cause as to why the prayers made in the said petition should not be granted by this Court.

16. Learned Senior Counsel states that Shri Soter D'Souza is present in Court. He accepts notice.

17. Our order dated 7.12.2009 as well as this order be also placed in the said petition of Shri Soter D'Sousa. The said petition to come for hearing after three weeks i.e. 15.2.2010. This petition could also be heard on the same date.

N. A. Britto, J

U. D. Salvi, J

Ap/-

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Mrs. Norma Alvares, Amicus Curiae.

Mr. S.S. Kantak, Advocate General with Ms. S. Mordekar, Addl. Government Advocate for Respondents.

Coram:- SMT. V.K.TAHILRAMANI & R. M. SAVANT, JJ.

Date:- 17th December, 2009

P.C.

Affidavit of the Chief Engineer, Government of Goa tendered by learned Advocate General, Mr. S. S. Kantak is taken on record.

Learned Amicus Curiae Mrs. Norma Alvares has handed over a list of issues which is pending completion. Copies of the same have been furnished to the learned Advocate General and other parties just now.

Learned Advocate General seeks time. On his request stand over to 18.1.2010.

SMT. V.K.TAHILRAMANI, J.

R. M. SAVANT, J.

MF/-

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

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STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Advocate Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Ms. Sapna Mordekar, Addl. Govt. Advocate for the State.
Mr. A. N. S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for respondent No.3.
Mr. J. A. Lobo, Advocate for respondent No.4.

Coram:- SMT. V.K.TAHILRAMANI & N. A. BRITTO, JJ.

Date:- 7th December, 2009

P.C.

This writ petition was initiated pursuant to Order dated 5.4.2005 and the Government responded to the petition by filing affidavits from time to time. This Court also passed a number of orders. Presently, the petition is awaiting only for a report from the Government regarding policy of siting of industries on river banks. For that purpose, learned Advocate General seeks some more time. We are inclined to grant the same.

2. By affidavit dated 26.1.06, this Court was informed that the grievance of the public regarding their need for water supply was addressed in an efficient way (at page 50). By another affidavit dated 8.1.07, this Court was informed that the capacity of Assonora Plant would be augmented by 50 MLD in the year 2008. We are now at the end of year 2009. This Court was again informed by an affidavit dated 2.2.07 that an expert was appointed to suggest

remedial measures to work out a distribution system for Bardez Taluka (at page 182). One does not know as to what has happened to the said remedial measures and Bardez Taluka appears to have remained a problem area.

3. With all the above assurances, no such action at ground level appears to have been taken, as a result, people of Bardez Taluka, particularly Mapusa city and Porvorim town continue to suffer.

4. A report on Herald dated 19.10.09 shows that the residents of Porvorim had no water to take bath on the day of Diwali! The report further indicates, quoting an MLA, that frequent power disruptions at Padosem and Assonora water treatment plants have become a regular feature, which means that there is irregular water supply to the Taluka. Another report of yesterday's Times of India, quoting an Ex-Minister, says that water supply to Porvorim is "most horrible" and despite agitations, people of Porvorim do not get water even for two hours a day and although there is construction boom, there is no water supply in some areas. There are also reports to say that the people in Porvorim do not even get water for 2 or 3 days. There must be some truth in the reports.

5. We are, therefore, inclined to reexamine the issue of inadequate water supply to Bardez Taluka, particularly city of Mapusa and Porvorim town, the latter being at the tail end of water supply and direct the Principal Chief Engineer, P.W.D. to file an affidavit disclosing the steps taken to ensure adequate water supply to the residents of Bardez Taluka in general and city of Mapusa and Porvorim town, in particular. After all, right to have clean, potable water falls within the ambit of the right to live under Article 21 of the Constitution. The Principal Chief Engineer to respond to the first

(2) news paper report and also disclose on affidavit why he should not impose a moratorium on releasing water connections for constructions and for commercial housing projects, until some concrete measures are taken for adequate supply to the residents on daily basis. Let such affidavit, with all details as to how much water (3) is required by the Taluka as a whole, how much is available for supply,and how much is actually supplied, etc., be filed by the Principal Chief Engineer before the next date. Stand over to 14th December, 2009.

SMT. V.K.TAHILRAMANI, J.

N. A. BRITTO, J.

ssm.

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Advocate Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Ms. Sapna Mordekar, Addl. Govt. Advocate for the State/Respondent.
Mr. A. N. S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for respondent No.3.
Mr. J. A. Lobo, Advocate for respondent No.4.

Coram:- SMT. V.K.TAHILRAMANI & N. A. BRITTO, JJ.

Date:- 30th November, 2009

P.C.

Heard. Learned Advocate General submits that the recommendations of the Goa State Pollution Control Board regarding zoning atlas and siting guidelines have already been approved by the State Government. Learned Advocate General further submits that the concern expressed by the learned Amicus Curiae will also be taken into consideration and necessary affidavit will be filed before the next date. We accept the statement and adjourn the petition to Monday i.e. 7.12.2009. Let copy of the proposed affidavit be served to the learned Amicus Curiae, before the next date.

SMT. V.K.TAHILRAMANI, J.

N. A. BRITTO, J.

ssm.

IN THE HIGH COURT OF BOMBAY AT GOA

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Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Advocate Ms. Norma Alvares.
Mr. S. S. Kantak, Advocate General with Mr. M. Salkar, Addl. Govt. Advocate for respondent No.2.
Mr. A. N. S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for respondent No.3.
Mr. J. A. Lobo, Advocate for respondent No.4.

Coram:- S.B. DESHMUKH &
U. D. SALVI, JJ.

Date:- 20th July, 2009

P.C.

We have heard learned Amicus Curiae; Mr. S. S. Kantak, learned Advocate General for the State; Mr. Nadkarni, learned Senior Advocate for respondent No.3 and Mr. J.A. Lobo for respondent No.4.

Learned amicus curiae has tendered a document raising 4 concerns, pursuant to the affidavit filed by the Director of Industries. Learned Advocate General seeks time to file an affidavit in response to this document. Copies of the affidavit on behalf of the State to be filed, be served to the Counsel appearing for the parties, including the learned amicus curiae. Stand over to 3rd August, 2009.

S.B. DESHMUKH, J.

U. D. SALVI, J.

S.M.W.P No 1 / 2005

Three documents were prepared by the State Pollution Control Board, after consultation with all stake holders (i.e concerned government departments, industry representatives, NGOs etc.) and subsequently approved by the Central Pollution Control Board, namely:

1. Environmental Atlas of Goa
2. Zonal Atlas for Siting of Industries
3. Industrial Siting Guidelines

The Environmental Atlas is the source document for preparing the Zonal Atlas. The Industrial Siting Guidelines are framed to ensure implementation of the Zonal Atlas.

Concerns: Paras 4, 5, 6, 7 of Aff.

1. The Atlas and Guidelines are in the nature of recommendations rather than suggestions as stated in the affidavit of the Director of Industries. (S. 17 (1)(b) of the Water Act – to advise the State Government on any matter concerning the prevention, control or abatement of water pollution). — para 4 ~~para 5~~ of Aff

2. There is no clear statement in the affidavit that the Government itself has accepted the Guidelines for implementation. (i.e. is the Government in agreement with the Guidelines or does it have any reservations). Statement in the affidavit that the SPCB's suggestions are incorporated in the Draft Regional Plan does not disclose Government's commitment to implementation of the Guidelines nor does it give adequate assurance that the SPCB's recommendations will eventually be incorporated in the finalized Regional Plan. Draft Plan open to objections. Since Court has pursued this in the SMWP.

3. In the interim, the Guidelines must be followed for all new industries proposed to be located near rivers i.e. both water polluting and air polluting industries, since deposits from air pollution land on the ground and are carried to the rivers especially during the monsoons. To make distinctions incorrect.

4. In the interim, the Guidelines should also be implemented with regard to proposals from existing industries on river banks for expansion, modification or diversification, since the intent of the Guidelines is to prevent and control water pollution so as to provide safe potable water to the public, which is the chief concern in this suo moto writ petition. Consent renewals without expansion, modification or diversion may be exempt from the Guidelines.

Amicus Curiae

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Ms.Norma Alvares,Amicus Curiae.
Mr. J. Godinho, Advocate for the respondent No.3.
Mr. J.A.Lobo, Advocate for the respondent No.4.
Mr. S.S.Kantak, Advocate General with Mr. M. Salkar, Additional Government Advocate for the respondent Nos. 1 and 2.

Coram:- B. P. DHARMADHIKARI &
U. D. SALVI, JJ.

Date:- 6th July, 2009

P.C.

The respective learned Advocates state that the only issue left is about zoning requirements for citing of industries on river banks. The Central as also the State Pollution Control Board have submitted the environmental as also zoning atlas and the Government has taken them into account while framing the draft regional plan which has been already notified and the objections are invited. Subject to its finalisation, the Government has decided to follow the above mentioned zoning atlas and environmental atlas. The affidavit in this respect is placed before us today and an attention is being invited to para 6 thereof. The learned Amicus Curiae is seeking time of two weeks to go through affidavit and make an appropriate statement in this respect. Adjourned accordingly.

B. P. DHARMADHIKARI, J.

U. D. SALVI, J.

SMA

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Ms. N. Alvares, Amicus Curiae.
Mr. S.S. Kantak, Advocate General with Mr. A. Kamat, Addl. Govt. Advocate for Respondents No. 1 & 2.
Mr. A.N.S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for Respondent No.3.

Coram:- SWATANTER KUMAR, C.J. &
N. A. BRITTO, J.

Date:- 16th March, 2009

P.C.:

Learned Advocate General submits that because of the Election Code of Conduct having come into force, it may not be possible for the Government to take policy decisions. He further submits that there are no applications for grant of permission for industrial units to come up in Goa and, in any case, they do not propose to grant any permission till further orders.

S.O. 8/06/2009.

SWATANTER KUMAR, C.J.

N. A. BRITTO, J.

NH

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Mr. M. Salkar, Addl. Government Advocate for the State.
Mr. A. N. S. Nadkarni, Senior Advocate with Mr. J. Godinho, Advocate for Respondent no.3.

Coram:- P. B. MAJMUDAR &
N. A. BRITTO, JJ.

Date:- 30th January, 2009

P.C.

Learned Advocate General requested that about three weeks time may be given to place the decision taken by the Government on record as the Cabinet is likely to take decision on citing guidelines for Industries.

2. Request granted. Adjourned to 24.02.2009.

P. B. MAJMUDAR, J.

N. A. BRITTO, J.

arp/*

Stay

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTO WRIT PETITION NO. 1 OF 2005.

..... Petitioners

Versus

1. State of Goa through its Chief Secretary and another

2. Secretary P.W.D. Government of Goa, Secretariat, Porvorim,

3. State Pollution Control Board at Patto, Panaji, Goa ..... Respondents.

Coram :- A.P. LAVANDE, J.

Date : - 30th May, 2008.

P.C. :

1. Taking cognizance of acute water shortage in the State of Goa, this Court by order dated 5th April, 2005 directed the respondents to file affidavit dealing with several aspects in relation to supply of water for drinking and non-drinking purposes. Thereafter, several orders were passed from time to time and the above writ petition is pending disposal in this Court.

2. Herald dated 29th May, 2008 has published a news item, captioned "Panjim taps run dry for second day". As per the said news item water taps in Panjim went dry for second day following break

down of a pipeline. It has been further stated that while the pipeline of Opa has been repaired another stretch at Carambolim snapped throwing out of gear again.

3. The right to get unpolluted drinking water falls within the ambit of right to life and it is the duty of the State of Goa to ensure that the people in Goa get adequate unpolluted drinking water.

4. It appears from the above news report that water supply to Panjim was snapped on account of break down of pipeline. Since the above writ petition deals with the issue regarding shortage of adequate drinking water to the people of Goa, the situation arising out of break down of pipeline can be considered to be offshoot of the main issue which in my opinion, requires to be dealt with in the present writ petition. The State of Goa is expected to take appropriate steps to supply adequate drinking water to the people suffering on account of break down of pipeline. I, therefore, deem it appropriate to direct the respondent Nos. 1 & 2 to file an affidavit stating therein the steps which the State of Goa has taken and it proposes to take in case of break down of the pipelines in the State of Goa in order to ensure supply of adequate drinking water to the people in the affected areas. The affidavit shall be filed on or before 5th June, 2008.

5. The copies of this order be served on the respondent Nos. 1 & 2 as well as the learned Counsel appearing for the parties and also on the learned Advocate General and learned Amicus Curiae. The Registrar shall ensure that the copies of this order are served on the respondent Nos. 1 & 2 in the course of the day so that the direction given in this order is complied with.

S.O. to 9th June, 2008. Stp

A. P. LAVANDE, J.

SMA

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus
STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Advocate Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Ms. L. Dharwadkar, Addl. Govt. Advocate for the State.
Mr. J. Godinho, Advocate for the respondent No.3.
Mr. J. A. Lobo, Advocate for the respondent No.4.

Coram:- R.M.S. KHANDEPARKAR & N. A. BRITTO, JJ.

Date:- 17th March, 2008

P.C.

Affidavit dated 12.2.08 filed on behalf of respondent No.4 discloses that an Environmental Atlas of Goa was approved by the Central Pollution Control Board and the communication in that regard to the Goa Pollution Control Board was made vide letter dated 21.2.2007. The affidavit further discloses that the Zoning Atlas for siting of industries and industrial siting guidelines for North and South Goa Districts for implementation after consultation with the concerned Departments was communicated by the Central Pollution Control to the Goa State Pollution Control Board vide letter dated 18.10.07. Till this date, the Goa State Pollution Control Board has not placed before this Court as to what steps they have taken for implementation of the said guidelines and the Environmental Atlas of Goa. To the specific query in that regard, we are not getting any satisfactory answer from the Counsel for the Goa State Pollution Control Board.

2. Establishment of industrial units in the State of Goa and for that

matter at any place, can have serious consequences on the environment in the concerned area. It is essentially from that point of view that the guidelines are necessary for siting of industries. It is the duty of the State Pollution Control Board to ensure that such guidelines are strictly followed. Inspite of the fact that the Central Pollution Control Board having informed such guidelines to the Goa State Pollution Control Board vide letter dated 18.10.07, the Goa State Pollution Control Board has failed to take any steps till this date. We do not appreciate the failure on the part of the Goa State Pollution Control Board to take effective steps in that regard and further to place on record the details about such steps taken by the said Board. It is not for the Court to issue directions to every department and certainly not to the Authority which is expected to take appropriate steps to ensure pollution free environment in the State of Goa and how they should perform their duties and as to how they should be alert in performance of their duties in that regard.

3. We, therefore, direct the Goa State Pollution Control Board to place on record what steps they have taken for proper implementation of the Environmental Atlas of Goa, as well as the Zoning Atlas for siting industries and industrial siting guidelines of Goa, as has been approved by the Central Pollution Control Board from the time they were communicated to the Goa State Pollution Control Board by the Central Pollution Control Board till this date, as well as further steps to be taken for implementation of those guidelines. A detailed affidavit in that regard should be filed on or before 24.3.2008. S.O. to 24.3.08.

R.M.S. KHANDEPARKAR, J.

N. A. BRITTO, J.

ssm.

Stay L

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

versus

State of Goa through its Chief Secretary and anr. ... Respondents

Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Ms. G. Bhonsule, Additional Government Advocate for the State/Respondent.
Mr. J. Godinho, Advocate for the Respondent No.3.

CORAM : R. S. MOHITE & N. A. BRITTO, JJ.
DATE : 19TH SEPTEMBER, 2007.

P.C.:-

Heard both sides.

2. On the basis of an editorial captioned "Rain and Dry Taps" which was published in Navhind Times dated 24/03/2005, Suo Moto Writ Petition was registered and the State was asked to file affidavit dealing with the following aspects.

a. Steps taken/proposed to be taken by the Government to supply adequate pollution free water for drinking in urban and rural areas.

b. Steps taken/proposed to be taken by the Government for supply of water for non-drinking purposes.

c. Steps taken/proposed to be taken by the Government to avoid wastage of water due to pipe leaks, leaking of taps and overflowing of tanks.

d. Steps taken/proposed to be taken by the Government for proper water management.

3. Subsequently and as the matter progressed, two additional issues were also considered namely:

a. Protection of ground water in the State.
b. Formulation of a policy for citing of industries in the State.

Goa State Pollution Control Board & CPCB was thereafter joined as a Respondent to the petition.

4. From time to time Affidavits have been filed on behalf of State Government and by the Goa State Pollution Control Board. The Affidavits disclose various steps taken by the State Government on the issues outlined above. They are a matter of record. The Affidavits also disclose various proposals initiated by the Government and the estimated period during which they would be completed. These are summarized below.

A. The Government has proposed additional water treatment plants at Canacona(10 MLD), Dabose(10 MLD), Assnora(50 MLD), all estimated to be completed by December 2008. A water treatment plant is also proposed at Salaulim (Augmentation of filter bed by 25 MLD) which is estimated to be completed by November 2007.

B. The Government has proposed to replace the entire 1400mm PSC pipeline from Xelpem to Margao for a length of 25 Kms. costing approx. Rs.40 crores. The work is likely to be completed by May 2008.

C. Government has proposed to buy durable water meters and make the supplier responsible to maintain them for 6 years. 20,000 water meters (costing Rs.3.2 crores) have been ordered from M/S Chetak Control System Pvt. Ltd. and the same have been already supplied.It is stated that sample meters are presently being tested at Fluid Control Research Institute and as soon as report is received the Government will install the new meters zone-wise within a period of 6 months. It is further stated that Administrative Approval and Expenditure Sanction for procuring 10,000 additional water meters(costing Rs.2.36 crores) is expected by September 2007; Government proposes to obtain loan from Japan Bank for International Cooperation (JBIC) where funding provision is made for replacement of 1,00,000 water meters; JBIC funded projects will be executed during 2007-2013; The tentative date for signing agreement between Government of Japan and Government of India is fixed on 20/9/2007. The new meters procured from time to time will be installed zone-wise eventually covering the entire State.

D. The Supervisory Control and Data System(SCADA) for Opa to regulate the flow of water in to the pipeline and to detect and minimize wastage of water is expected to be completed by end of 2007.

E. The Government will take up the 200 MLD Salaulim water supply project on priority basis. The project is proposed to be completed in two phases. The first phase of 100 MLD is proposed to be completed by 2012 and the second phase of 100 MLD is proposed to be completed by 2018.

F. Ground Water Cell has been constituted u/s 3 of the Ground Water Regulation Act, 2002(GGWR) to declare areas in the State as scheduled, water scarcity and over exploited areas. Two Officers have been appointed to implement GGWR. Areas will be identified and declared u/s 4 of GGWR by 31 October, 2007.

(1)

Applications are received for registration of water tankers by specifying the source of ground water for drawal and transporting the same. Some applications are already processed and permission is granted with a condition that the license will be revoked in case the area is not classified as scheduled area. Some applications which are under process will be granted/rejected after the areas are identified and declared as Scheduled, water scarcity or over exploited areas. Methods for monitoring the drawal of water by tankers are under examination.

(2)

5. The Government has submitted that on account of non availability of Global Information System(GIS) Maps, Pilot Study proposed for Bardez taluka could not be taken up for the purpose of installation of proper zoning system with low meters and isolation valves at stratic locations. It is hoped that Government will consider this study as and when such maps are available or may examine any alternate method.

6. The Goa State Pollution Control Board (GSPCB) has submitted its proposal of Industrial siting guidelines, Zonal Atlas and Environmental Atlas for Goa to the Central Pollution Control Board. The Central Pollution Control Board is directed to finalize the same and communicate to the Goa State Pollution Control Board within a period of 3 months from the date this order is received by them.

(3)

7. It has been brought to our notice that water actually reaching the taps is muddy and in an article published in "Herald" on 16-9-2007, it is admitted that water is being distributed from any available source without proper treatment and that people are getting muddy water. The Chief Engineer, PWD to file an affidavit indicating as to how many water treatment plants exist in the State of Goa and which areas do they cover. The affidavit will identify the areas, if any where water is being supplied without passing through the water treatment plants. The newspaper article is taken on record and marked 'X' for identification. The affidavit be filed on or before the next date. Advance copy be given to the other side.

Affidavit

Petition therefore be listed on 19 November, 2007.

R. S. MOHITE, J.

N. A. BRITTO, J.

Stop

Start

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005
Versus
STATE OF GOA THROUGH ITS CHIEF
SECRETARY AND ANR., ... Respondents

Ms. Norma Alvares, Amicus Curiae.
Ms. G. Bhonsule, Addl. Govt. Advocate for the for the State.
Mr. J. Godinho, Advocate for the respondent No.3.

Coram:- R.M.S. KHANDEPARKAR &
R. S. MOHITE, JJ.
Date:- 13th August, 2007

P.C.

After hearing the learned Counsel for the parties and the learned Amicus Curiae for some time, it is found that the respondents are yet to comply with all the directions issued under Order dated 9th July, 2007. Time granted to the respondents for compliance of the said order.

2. The respondents shall also place on record the steps taken by the respondents to ascertain the defects, if any, in the water meters which are to be replaced and ordered for. The respondents shall also place on record investigation, if any, made regarding the cause for water meters getting damaged too often.

3. The respondents shall also place on record the information regarding the area in which water tankers are utilised, the consumers they get for, as well as the areas from which the water is being tapped by such water tankers. The respondents shall also place on record the steps which the respondents propose to take to avoid indiscriminate tapping of water by water tankers. The chart produced by the learned Amicus Curiae is placed on record and with reference to the observations made therein, the respondents are expected to file necessary clarification in the form of an appropriate affidavit.

4. As regards the guidelines for siting industries and finalisation of environmental atlas for Goa, it is necessary to join the Central Pollution Control Board as party-respondent and to issue notice to the said Board. The Registry is directed to join the Central Pollution Control Board as party-respondent and to issue notice to the Central Pollution Control Board, returnable on 27th August, 2007. Meanwhile, the respondents to place on record the necessary details as afore stated along with the compliance report of the order dated 9th July, 2007. S.O.to 27.8.2007.

R.M.S. KHANDEPARKAR, J. R. S. MOHITE, J.

Stop

start

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTU WRIT PETITION NO. 1 OF 2005

Versus

STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ... Respondents

Ms. Norma Alvares, Amicus Curiae.
Mr. S. S. Kantak, Advocate General with Ms. G. Bhonsule, Additional Govt. Advocate for the State/Respondent.
Mr. J. Godinho, Advocate for the respondent No.3.

Coram:- R. S. MOHITE &
N. A. BRITTO, JJ.
Date:- 9th July, 2007

P.C.

Heard both sides. It is found that from time to time, affidavits have been filed indicating the existence of defective water meters. The supply of water on minimum charge basis where there are defective water meters incurs loss of revenue to the Government and utilisation of water at a cheaper rate. Even assuming that the replacement of identified defective water meters is a continuing process, there is no reason whatsoever as to why the water meters already identified to be defective, should not be replaced or repaired immediately.

2. The learned Advocate General makes a statement that an attempt would be made to procure replacement of water meters to replace the defective water meters where they cannot be economically repaired. He seeks two weeks' time to place on record the exact number of identified defective water meters. He further submitted that he will give a time-bound programme during which the new meters will be procured for replacing the water meters which have been already identified to be defective.

(1) Water meters
AH
PG 206

3. It is seen that in the year 2002, the Goa Ground Water Regulation Act, 2002 has been promulgated. To implement this Act,

AH
2007

what is first required to be done is to issue a declaration relating to scheduled, water scarcity and over exploited areas. We are informed that this could not be done so far because a report of the Central Ground Water Board had been awaited. We are informed that the said report has now been received about four months ago. It is desirous that further steps towards making a declaration under section 4 of the Act are urgently to be taken. The learned Advocate General states that a copy of this report will be furnished as an annexure to a further affidavit which will be filed in this Court.

(2) CGWB Report

(3) Decl. u/s 4 of CGWA

4. It appears from the record that as regards registration of water tankers, figures have been obtained from the North Goa District. The learned Advocate General states that the details in this regard are not proper because it pertains to all the tankers. He, however, states that within two weeks, a list of all tankers which are registered for the purpose of carrying water, under the Motor Vehicles Act, will be obtained and furnished to this Court.

All pg 259

(4) Tankers

All pg 210.

5. As regards the pilot project, the affidavit states that project which pertains to equal distribution of water has not taken off due to absence of detailed Global Information System (GIS) maps. The learned Advocate General states that the possibility of getting alternative information in the absence of such maps will be explored and if it is technically viable to do so, then this Court will be informed on an affidavit.

(5) Pilot Project NO response

6. As regards siting of industries along side rivers, the Counsel appearing on behalf of the Goa State Pollution Control Board makes a statement that a final report of the State Pollution Control Board will be prepared and placed before this Court within a period of two weeks. He further states that a copy of the said report will be also sent to the Central Pollution Control Board, within a period of two weeks. The statements are accepted.

(6) final Report.

7. In the net result, the Chief Engineer, Water Resource Department to file an affidavit dealing with the aspects which are mentioned in this order and also annexing the documents. Further, an affidavit to be filed by the Member Secretary, Goa State Pollution Control Board, annexing final report. Both these affidavits to be filed within two weeks, with advance copies to the other side.

S.O. for 23rd July, 2007.

R. S. MOHITE, J.

N. A. BRITTO, J.

Stop

IN THE HIGH COURT OF BOMBAY AT GOA

SUO MOTO WRIT PETITION NO. 1 OF 2005

Versus

STATE OF GOA THROUGH ITS CHIEF SECRETARY AND ANR., ...Respondents

Ms. Norma Alvares, Amicus Curiae.

Mr.S. S. Kantak, Advocate General with Ms. G. Bhonsule, Additional Government Advocate for the State/Respondent.

Mr. J. Godinho, Advocate for the Respondent No.3.

Coram:- S.K. SHAH &
N. A. BRITTO, JJ.

Date:- 20th February, 2007

P.C.:-

We have heard the learned Amicus Curiae and we have also perused the affidavits filed by K. P. Nambiyar dated 2-2-2007 and the one filed by P. B. Badami dated 2-2-2007.

In the affidavit filed by Nambiyar, it is mentioned that the figures of non-revenue water has come down from 34% to 26% and is still constant. However, what is not stated is the percentage of actual wastage of water. It is necessary to identify the exact percentage of wastage of water so that steps could be taken for stopping the wastage. Action be taken by the next date. (1)

There is no classification of ground water done. The same shall be done by the next date. (2)

The learned Advocate General submits that the information from the Directorate of Transport is awaited with regards to the registration of water tankers and with regard to the transport of ground water. The same shall also be submitted by next week. The learned Advocate General (3)

further states that they will identify the non working water meters and then would take steps to repair the same or replace them, if they are beyond repairs. The identification of non working water meters would be done within a period of eight weeks from today. It is also directed to give the status as to submit the detailed Global Information System maps and with regard to the pilot project for Bardez Taluka. The authorities should also submit their alternative proposal for equitable distribution of water if the pilot project does not work.

S. O. - ten weeks.

S.K. SHAH, J.

N. A. BRITTO, J.

RD.

(1) Wastage of Water — Non working meters
— Leaking pipes etc.

(2) GGWAct — Bardam Aff pg. 187
— Ground Water Estimation Rep. - Feb '07
— Tentative classification

(3) Registration of Tankers — Bardam Aff.
— Details to be given to Dir of Tr.
— Purpose. Source + Qty of Water.

(4) Identify. of Non. Work Water Meters.

(5). Pilot Project - Nambiyar Aff - pg 181.

(6) SPCB — Env. Atlas of Goa - pg 162

NOTE ON S.M.W.P. 1 / 2005

(FOR THE PERUSAL OF HON'BLE HIGH COURT)

Suo Moto Writ Petition No. 1/2005 was registered on 5th April 2005 on the basis of an editorial captioned "Rain and Dry Taps" which was published in 'Navhind Times' dated 24th March 2005. The editorial, *interalia* indicated that people in Goa do not get adequate drinking water which is their basic need and that over the passing years the situation is turning critical on account of lack of proper water management. The editorial also indicated that considerable water is lost due to pipe bursts, leaking of taps and overflowing of tanks which appears to be on account of lack of proper maintenance work. Editorials of two other newspapers, 'Herald' dated 24.3.2005 and 'Gomantak Times' dated 25.3.2005 also indicated acute shortage of water in some parts of Goa.

The State was asked to file its affidavit dealing with the following aspects:

a. Steps taken/proposed to be taken by the Government to supply adequate pollution free water for drinking in urban and rural areas.
b. Steps taken/proposed to be taken by the Government for supply of water for non-drinking purposes.
c. Steps taken/proposed to be taken by the Government to avoid wastage of water due to pipe leaks, leaking of taps and overflowing of tanks.
d. Steps taken/proposed to be taken by the Government for proper water management.

Subsequently, and as the matter progressed, two additional issues were also considered namely:

e. Protection of ground water in the State.
f. Formulation of a policy for siting of industries in the state

The Goa State Pollution Control Board and the Central Pollution Control Board were also joined as Respondents to the petition.

From time to time affidavits have been filed by the aforesaid Respondents disclosing various steps taken on the issues outlined above. Among the works/measures that have been stated to have been initiated during the pendency of the petition and are now either completed or pending completion are the following:

1. A Water Supply Helpline has been set up by the Government to compulsorily register complaints from consumers from all over Goa about water quantity, pressure, leakages, billing complaints, tanker requirements, etc. These are transmitted to the concerned divisions to be attended to on priority basis. The two numbers of the helpline are 2420069 and 2420070. The helpline operates from 8 a.m. to 8 p.m. on all working days. It is proposed to extend the services to 24 hours coverage in the near future.

2. The Government has installed and commissioned a Supervisory Control and Data Acquisition System (SCADA) for the Opa water supply in order to regulate the flow of water so as to bring down wastage due to bursting of pipe lines and also to achieve equitable water supply to all consumers. If the system is found to be successful it is proposed to provide the same to other water supply schemes in Goa.

3. Government has replaced old leaking pipes in several talukas of Goa in order to reduce unaccounted flow of water. This is stated to be an ongoing process. Replacement of pipe line from Xelpem to Margao (25 kms) was completed on 30th May 2009.

4. Non-working or defective water meters have been repaired / replaced. 30,000 durable water meters have been purchased and are being installed zone wise. The work is expected to be completed by January 2011. Another 1 lakh water meters are planned to be purchased. As regards the procurement of new meters, it is stated that the supplier will have the responsibility to maintain the same for 6 years.

5. Public taps have been disconnected all over Goa and instead free water connections have been provided to BPL families.

6. Additional water treatment plants have been set up at

   a. Selaulim (25 MLD) – completed in May 2009.
   b. Canacona (10 MLD) – to be completed in April 2010.
   c. Dabose (10 MLD) – to be completed in April 2010
   d. Assanora (50 MLD) – to be completed in July 2010

7. The Government of Goa has entered into tripartite Agreement with Government of India and Government of Japan to take external assistance for major water supply projects. As per the agreement, Japan International Cooperation Agency (JICA) is preparing a master plan for adequate and equitable water distribution facilities in Goa.

8. Implementation of the Goa Ground Water Regulation Act 2002 (GGWRA) including classification of areas, designation of ground water officers, registration of water tankers and ground water structures such as open well, bore well and shallow well from which the tankers are drawing water., A licence is issued permitting applicant to draw water only from that source and the licensee is required to install a water meter to the lifting device at the source of ground water. The water tanker is to display on the body of the tanker the license number, source of drawal of water, name of tanker owner, certificate number from Goa State Pollution Control Board for fitness for source of water for potable use and certificate number from Director of Transport for internal stainless steel lining for tankers for potable water.

9. The State Pollution Control Board and Central Pollution Control Board have together finalized the Environmental Atlas for the State of Goa, Zoning Atlas for Siting of Industries and Industrial Siting Guidelines for North and South Goa. The Environmental Atlas is a compilation of environmental related information in the form of maps, text and statistical data on surface/ground water features, environmentally sensitive zones as well as major sources of pollution. The Zonal Atlas interrelates the sensitivity of environment with the pollution potential of industries so as to identify sites for locating industries so that the risk of pollution and adverse impact on environment would be minimum. The Industrial Siting Guidelines have specific recommendations for locating industries in North and South Goa districts. These documents were compiled after interactive meetings with all stake holders, i.e., various concerned government department, industry representatives, NGOs, etc.

   [With reference to State Govt's stand on this point, Hon'ble High Court may refer to orders dated 6th July 2009, 20th July 2009, 28th January 2010 and the affidavits of Shri Sanjit Rodrigues, Director, Directorate of Industries dated 6th July 2009 and 1st April 2010]. Guidelines for Siting – pgs 26 + 46

   Prepared by Norma Alvares, Amicus Curiae

Ankush Arondekar
V/s
State of Goa. WP 97/99
Disposed on 11/12/2000

No. J/SMWP-1-05/ 197 /2005

Date : 7th April, 2005

Check Issues Judy/NARE

IN THE HIGH COURT OF BOMBAY AT GOA
PANAJI BENCH

SUO MOTU WRIT PETITION NO. 1 OF 2005

.. Petitioner

V/s

State of Goa through its Chief Secretary and ors. .. Respondents

To,

1. Ld. Advocate General,
   Office of the Advocate General,
   Panaji, Goa

2. Mrs. Norma Alvares,
   Amicus Curiae

Sir,

As directed by the Hon'ble Court, I have the honour to forward herewith a copy of the Order dt. 05.04.2005 passed by this Hon'ble Court, (Coram : A.P. Lavande & N.A. Britto, JJ.) on 05.04.2005 in the above Suo Motu Writ Petition No. 1 of 2005 alongwith a copy of Press Clipping under caption "Rain and Dry Taps", for your information and necessary action.

Yours faithfully,

Smeeta R Shirodkar
(Smeeta Shirodkar)
Assistant Registrar
High Court of Bombay
Panaji Bench (Goa)

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IN THE HIGH COURT OF BOMBAY AT GOA.

SUO MOTO WRIT PETITION NO.1 OF 2005

... Petitioner.

V/s

State of Goa throug its Chief Secretary
and another. ... Respondents.

CORAM: A.P. LAVANDE, &
N.A. BRITTO, JJ.

DATE: 5TH APRIL, 2005.

P.C.

The above Suo Moto Writ Petition has been registered on the basis of the editorial captioned **"Rain and Dry Taps"** which was published in Navhind Times dates 24th March, 2005. The editorial, inter alia, indicates that the people in Goa do not get adequate drinking water which is their basic need. Goa with abundant rainfall which is over 100 inches every year, should have never faced acute shortage of water, but the fact remains that it is facing such crisis and that over passing years the situation is turning critical on account of lack of proper water management. Every year the people get scared of the impending water crisis. The editorial also indicates that the P.W.D. Secretary admitted that approximately 34 per cent of water is lost due to pipe leaks, leaking of taps and overflowing of tanks, which appears to be on account of lack of proper maintenance work. Editorials of daily 'Herald' dated 24.3.2005 and daily 'Gomantak Times' dated 25.3.2005 also indicate accute shortage of water in some parts of Goa.

The right to get unpolluted drinking water falls within the ambit of right to life, which is wide in its amplitude to cover the right to live. Hence, in order to ensure that the people in Goa get adequate unpolluted drinking water, we deem it appropriate to issue notice to the State of Goa, Chief Secretary, Porvorim, Goa and also to Secretary P.W.D., Government of Goa, returnable on 26th April, 2005. The respondents to file affidavit, inter alia, dealing with the following :

1. Steps taken/proposed to be taken by the Government to supply adequate pollution free water for drinking in urban and rural areas. — Para 3 & 4

2. Steps taken/proposed to be taken by the Government for supply of water for non-drinking purposes. — Para 5

3. Steps taken/proposed to be taken by the Government to avoid wastage of water due to pipe leaks, leaking of taps and overflowing of tanks. — Para 6 & 7

4. Steps taken/ proposed to be taken by the Government for proper water management. — Para 11

A copy of this order be also served on learned Advocate General.

Advocate, Mrs. Norma Alvares is appointed Amicus Curiae in the matter. A copy of this order be also served on Mrs. Alvares.

Stop

A.P. LAVANDE, J.

N.A. BRITTO, J.

IN THE HIGH COURT OF BOMBAY AT GOA

PANAJI – BENCH

APPELLATE SIDE

SUO MOTO WRIT PETITION NO.1 OF 2005

... PETITIONER

V/S

1. STATE OF GOA THROUGH ITS CHIEF SECRETARY, SECRETARIAT AT PORVORIM, GOA.
2. SECRETARY, P.W.D., GOVT. OF GOA, SECRETARIAT, PORVORIM, GOA.

THE NAVHIND TIMES

Thursday, March 24, 2005

EDITORIAL

Rain and Dry Taps

March 23

HUNDREDS of people with empty buckets demonstrating in front of the public works department office in Panaji on World Water Day brought back the memory of the old lament, "Water, water everywhere, but not a drop to drink". It is really surprising why Goans should demonstrate for making the government act and arrange supply of adequate drinking water. Drinking water is a basic need of the people, and it is really incomprehensible how any government with a constitutional obligation to look after the welfare of its people could choose to neglect its constitutional responsibility. But this is what has been happening; and it has been happening every year in the state. Every season, with the summer marching up, the people get scared of the impending drought.

Even if you were to believe what the officials say, the reason would be traced to the utter neglect of the government only. The other day the PWD secretary confessed that water supply gets hindered due to cracks in the pipeline. In fact bursting of pipelines has been a common feature in the state. The PWD secretary admitted that approximately 34 per cent of water is lost due to pipe leaks, leaking taps and overflowing of tanks. Some time back the Selaulim pipeline burst at least on two occasions within a span of a month. This reflects the nature of the maintenance work and the material supplied. The government has undertaken a plan of laying an 11 km-long pipeline from Selaulim to Kalay river at a cost of about Rs 11 crore in view of the anticipated water crisis in North Goa. Till the completion of the project the people of the state will have to wait patiently and miserably!

Goa, with nine rivers and abundant rainfall, should have never faced drought situations; but the fact remains that it is facing such crises, and with every passing year the situation is turning critical. A report of the Goa Chambe of Commerce and Industries compiled a couple of years back has come out a grim forecast: The state will face acute drinking water scarcity to the tune of 373 million litres pe day by the year 2011. The report noted that in the years t come, water scarcity would plague this tiny coastal state Unfortunately this was not enough to alarm th government and officials as they are yet to work out comprehensive solution. To hide their failures, they have common refrain that since the state has a thin soil cove and highly rugged topography it does not permit storag of water on surface. This is a ridiculous clarification; ye even if we believe their theory, what is their justification fo not repairing the air-meters which deny them water?

The politicians, planners and bureaucrats have bee quite lax and criminally liberal in allowing unrestraine urban development, so much so that whole of Goa urbanised. But they have not been least inclined to ful the primary need of the people for water. The less-tha enthusiastic approach got manifested in the poor supp of the drinking water; they did not care to foresee th after 44 years of Liberation, the mad pace of urban grow will create problems, that the state's population will increa and the people will require more drinking water. T current demand of water supply, if we treat 2005 base lev is around 503 MLD. But against it the government has be supplying only 394 MLD of treated water. The governme claims to be contemplating to increase the water treatm capacity to meet the demand. Interestingly, they plan increase the supply by additional 320 MLD during n two years, but by that time according to them the dema would shoot up to 770 MLD. This implies that the s government would never be in the position to meet actual demand.

Experts suggested rain-harvesting. But it proved to non-starter. There is no sense of urgency seen among politicians and bureaucrats who are expected to pro for people basic needs. They are reluctant to try innove ways. Though they harp on water-management, very has been done on this front too. Goa has fresh w springs, several age-old tanks and nearly 400 lakes could provide additional water. The Goa Ground W Regulation Rules 2003 has been notified for extracti groundwater through wells in scheduled areas, but it to be implemented. No one ever bothered to think Goa, which gets over 100 inches of rain water every should face acute water shortage. The government c approach genuine NGOs, like the Centre for Science Environment, Delhi for innovative ideas on w development.

THE NAVHIND TIMES

Thursday, March 24, 2005

EDITORIAL

Rain and Dry Taps

HUNDREDS of people with empty buckets demonstrating in front of the public works department office in Panaji on World Water Day brought back the memory of the old lament, "Water, water everywhere but not a drop to drink". It is really surprising why Goans should demonstrate for making the government act and arrange supply of adequate drinking water. Drinking water is a basic need of the people, and it is really incomprehensible how any government with a constitutional obligation to look after the welfare of its people could choose to neglect its constitutional responsibility. But this is what has been happening; and it has been happening every year in the state. Every season, with the summer marching up, the people get scared of the impending drought.

Even if you were to believe what the officials say, the reason would be traced to the utter neglect of the government only. The other day the PWD secretary confessed that water supply gets hindered due to cracks in the pipeline. In fact bursting of pipelines has been a common feature in the state. The PWD secretary admitted that approximately 34 per cent of water is lost due to pipe leaks, leaking taps and overflowing of tanks. Some time back the Selaulim pipeline burst at least on two occasions within a span of a month. This reflects the nature of the maintenance work and the material supplied. The government has undertaken a plan of laying an 11 km-long pipeline from Selaulim to Kalay river at a cost of about Rs 11 crore in view of the anticipated water crisis in North Goa. Till the completion of the project the people of the state will have to wait patiently and miserably!

Goa, with nine rivers and abundant rainfall, should have never faced drought situations; but the fact remains that it is facing such crises, and with every passing year the situation is turning critical. A report of the Goa Chamber of Commerce and Industries compiled a couple of years back has come out a grim forecast: The state will face acute drinking water scarcity to the tune of 373 million litres per day by the year 2011. The report noted that in the years to come, water scarcity would plague this tiny coastal state. Unfortunately this was not enough to alarm the government and officials as they are yet to work out a comprehensive solution. To hide their failures, they have a common refrain that since the state has a thin soil cover and highly rugged topography it does not permit storage of water on surface. This is a ridiculous clarification: yet even if we believe their theory what is their justification for not repairing the [illegible] which deny them water

Behind Th

by Praful Bidwai

SUCH is the monumental ineptitude and tactlessness that the United Progressive Alliance demonstrated in Jharkhand that one is tempted to say it lost in 10 days a good deal of the goodwill it had earned in the preceding 10 months after humbling the National Democratic Alliance in national elections. The Congress almost decided to snatch defeat from the jaws of victory by refusing to negotiate an alliance with the Rashtriya Janata Dal and the Left -- despite the handsome victory in 13 out of Jharkhand's 14 parliamentary constituencies this had delivered.

Then, the UPA made its second blunder: of pushing its claim to power despite having only 33 seats (as against the NDA's 36) in the 81-member Assembly. It was widely seen as having abused the Governor's office. It failed to hold a vote of confidence and emerged badly mauled from the fiasco. It enabled the NDA to regain not just power, but a measure of democratic credibility. Actually, neither alliance won the election. In fact, the NDA's vote declined from 36.8 per cent last year to just 27.4 per cent. Despite this, and a marginal lead in seats, the NDA staked its claim to power.

Such tactics -- and the strong-arm methods of Chief Minister, Mr Arjun Munda -- hardly speak of democratic credentials. But rather than let the NDA discredit itself, the UPA began competing with it. In the process, it allowed the NDA to emerge as a defender of democracy, one endorsed by the President of India and the Supreme Court. Large sections of the media, sympathetic to the BJP or manipulated by it, added greatly to the effect. In reality, there were no heroes in Jharkhand. Every major actor played a questionable role, showing democracy in poor light and exposing weaknesses in institutional arrangements. One of the first villains was Governor, Mr. Syed Sibtey Razi. For mysterious reasons, he decided that Mr Shibu Soren would be better able to provide a viable government than Mr Munda and swore him in. He could have credibly argued that such discretionary power is indeed available to him under the Constitution and backed his judgment with

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ASSESSMENT AND DEVELOPMENT STUDY
OF RIVER BASIN SERIES : ADSORBS/3/78-79

SCHEME FOR ZONING AND CLASSIFICATION OF INDIAN RIVERS ESTUARIES AND COASTAL WATERS (PART ONE : SWEET WATER)

CENTRAL BOARD FOR THE PREVENTION
AND
CONTROL OF WATER POLLUTION
NEW DELHI

METHODOLOGY

3.1 Basis for Classification

3.1.1 The basis for framing the scheme of classification may be either the existing water quality or the established present traditional use of organized nature. Ascertaining the existing water quality warrants extensive monitoring. In India systematic monitoring has not yet been instituted and meaningful data to frame a scheme for classification based on existing water quality data is not available. Therefore, a scheme of classification based on present traditional organized use is adopted, for which the first step is to identify the uses. The following uses are identified for fresh and sea waters :—

Fresh Waters

—Drinking water sources without conventional treatment but after disinfection
—Outdoor bathing (organised)
—Drinking water source with conventional treatment followed by disinfection
—Propogation of wild life
—Fisheries
—Recreation & Aesthetics
—Irrigation
—Industrial Processing
—Industrial Cooling
—Navigation
—Controlled waste disposal

Sea Waters (Including estuaries and coastal waters)

—Salt pans
—Shell fishing
—Contact water sport
—Commercial fishing
—Recreation (non contact)
—Chemical Recovery
—Industrial cooling
—Harbour
—Navigation
—Controlled waste disposal

The listing of the uses is in the order of the degree of water quality requirement. It is obvious that any stretch of a lotic water body will be subjected to more than one of the above listed uses.

3.1.2 The scheme of classification, to deal with such multiple use situation, is evolved based on that use which demands the highest degree of water quality. The use thus identified is referred to as the *designated best use*. Though there are many uses of water, the classification

categories may be only as many as are required because of distinct quality requirements for the various organised uses. The classification scheme based on *designated best use* is as follows :

Fresh Waters

Designated best uses	Nomenclature (Class of Water)
Drinking water source without Conventional treatment but after disinfection	A
Outdoor bathing (organised)	B
Drinking water source with conventional treatment followed by disinfection	C
Propagation of wild life, Fisheries	D
Irrigation, Industrial cooling, Controlled waste disposal	E

Sea waters (including estuaries and coastal water)

Salt pans, Shell fishing, Contact water sport	SW I
Commercial fishing (Recreation Non-contact)	SW II
Industrial cooling	SW III
Harbour	SW IV
Navigation, Controlled waste disposal	SW V

3.2 Sequential Procedures

3.2.1 The zoning of water bodies consist of the following steps:

Step 1 : prepare an inventory of water bodies or portions thereof

Step 2 : identify the various uses of each of the water body or portions thereof

Step 3 : identify the *designated best use* of each of the water body or portions thereof

Step 4 : assign the class nomenclature based on the *desiganted best use* from the scheme of classification to each of the water body or portions thereof.

Development of water quality criteria for the water of various classifications and preparation of "Water Quality Maps" shall follow the exercise of zoning. This would also ascertain whether there is a need to control pollution or to control human activities having pollution potential, and if so the extent upto which the control has to be exercised.

3.2 2 There are possibilities of incompatibility creeping in the zoning of portions of water bodies. The established and traditional uses which are the basis on which the entire scheme is built up may cause to result a situation in which a downstream stretch of a water body is zoned at a class higher than the zoned class of the immediately upstream stretch. The resolution of such a situation has to be based on considerations of assimilative capacity of the water body,

stretch lengths, exact location of extractive and in situ uses, the latter including controlled or uncotrolled waste discharges. The same considerations should weigh when a tributary of lower zoned class joins the higher zoned class of main river in which case the relative flow between the tributary and main river is to be taken into account. In the case of inter-State rivers the upstream State will ensure that the river is at least at class 'C' status, i.e., suitable as drinking water source with conventional treatment followed by disinfection, when it enters the downstream State.

3.2.3 The zoning of pristine waters which are not put to any use has to be at the highest class, the basis for which is following extract from the preamble to the Water (Prevention and Control of Pollution) Act, 1974 ;

"An Act to provide for the prevention and control of water pollution and the *maintaining or* restoring of *wholesomeness of water,* ....".

3.2.4 A map of the zoned lotic water bodies of each State will be prepared by the respective State Boards for the Prevention and Control of Water Pollution and the consolidated national Map by the Central Board for the Prevention and Control of Water Pollution. The following scheme of colour representation of the zoned classes in the map preparation has been adopted to ensure uniformity:

Fresh Water

Zoned class	Colour Scheme
A	Dark blue
B	Light blue
C	Green
D	Yellow
E	Black

Sea Waters

SW I	White
SW II	Brown
SW III	Orange
SW IV	Grey
SW V	Black

The zoning will be depicted by providing the colour scheme to river stretches and not by colouring the portion of the catchment area of the stretch of the water body. The tributaries to a main river will also be classified but the necessity of zoning of sub-tributaries and further is a matter of detail and very much depends on the magnitude of flow in them, their relative importance and contribution to the riverine system under consideration.

3.3 Implications of Zoning of Natural Water Bodies

3.3.1 The zoning of water bodies or of portions thereof implies control of pollution caused by human activities to the extent dictated by the water quality requirements of the class of water for which they are zoned. A corollary of such a plan of action is the requirement of monitoring the zoned water bodies or portions thereof and compare the monitored data of the zones with the water quality requirement of the class of the zones. Any deficiency in the ambient water quality warrants appropriate pollution control on the discharges reaching the zone from the catchment area of the zone including those located upstream. Thus, it will be seen that a quantitative rationale is built up to determine the level of pollution control effort. In extreme cases where it is found that qualitative control of discharges under consideration even to the highest degree utilising the best available technology cannot bring the ambient water quality to a level fit to sustain the zoned class, which in turn means the *designated best use,* the use has to be abandoned. As a consequential step the water body or the portion thereof has to be rezoned for appropriate class. The exercise of zoning, thus it is seen, is a continuing one which may involve both upgrading and downgrading. Alternatives to be considered before abandonment of a traditional use and consequent rezoning can be (i) relocation of the discharge causing industry or its outfall, (ii) possibility of providing more than conventional treatment in case the best use is an extractive one, and (iii) river flow regulation. Considerations of techno-economic feasibility and socio-economic acceptability will dictate the choice.

3.3.2 In the case of new industries the approval of its siting, at a particular location from water pollution control angle will have to be dictated by the zone of the water body into which the industry will effect its effluent discharge Another situation may arise in which a local authority may desire to locate the intake for a water works at a particular portion of water body and the concerned Board for the Prevention and Control of Water Pollution may have to advise the local authority that such a location would be incompatible with the zoned class and another location has to be sought. The foregoing sections explain the concept of discipline in water use sought to be enforced by zoning the water bodies. Furthermore, the classification scheme and the zoning based on the scheme serve as the connecting link between the familiar concepts of stream standards and effluent standards.

PRIMARY WATER QUALITY CRITERIA

4.1 Development of Criteria

4.1.1 Water quality criteria for the various uses of water are suggested limiting concentrations of constituents in waters, which are expected to result in an aquatic ecosystem suitable for the respective uses of water. The criteria for the various uses are developed from experimental data or in situ observations relating to organism responses to a particular constituent of water under controlled environmental conditions for a specified period of time. The criteria levels for drinking water source will have to be based on removability of the constituents at the water treatment plants and available data on human health protection. Criteria are not a set of static values but are subject to change as scientific data get updated and more and more obscured phenomena are explained, and they provide the guidelines to frame standards. Scientific experiments to study the effects of particular substances on aquatic organisms conducted in other parts of the world may be traced back to early this century.

4.1.2 The choice of test organism, the application factor, and the nature of response looked for are important aspects of the scientific process preceding criteria development, which require careful considerations. The adaptation of organisms to a water of quality poorer in the light of water quality criteria developed from experiments which have necessarily to be of less than long duration, places the very concept of such development on a neubious footing when the criteria are sought to be made universal. Against the above background, one is bound to ask where do we stand in our country in developing criteria cut out specifically for a particular use of a particular water body or atleast common criteria for all our water bodies. The answer is no where. But then the pollution control efforts should not be stalled for want of data required to develop criteria. Prudence dictates that judicious borrowing of criteria developed elsewhere is the only option left at this point in time and recourse has been taken to such borrowing in developing the criteria in this treatise which have been adopted by all the Boards in the country for the prevention and control of water pollution.

4.2 Primary Criteria

4.2.1 The constituents of water which have bearing on the various uses of water identified in 3.1.2 are already too many ; and the number keeps on increasing as new knowledge on the effects of substances are emerging and as new substances are found in the aquatic environment. Ideally and by definition, water quality criteria for a specific use should cover all such substances known to have bearings on the use. However, the water quality criteria adopted by the Board and presented herein are not for specific uses but are for the various classes of water identified under the classification scheme based on *designated best use*. The water quality criteria are qualified by the word primary to signify only those parameters which are of primary concern. In case the monitored water quality of a strech classified and zoned, satisfied the primary criteria the stretch must be subjected to more elaborate monitoring covering the entire spectrum of parameters for selecting the stretch for the specified use.

4.2.2 The *primary water quality criteria* for the various classes of water identified under the scheme of classification are derived from the criteria developed in other parts of the world specially, the United States of America, the United Kingdom, West Germany, and Japan for the

designated best use corresponding to the classes. For ready reference the specifications for classification and zoning prevalent in those countries are presented in Appendix I. The *primary water quality* criteria and the rationale for their development are presented in Tables 4.1 through 4.5.

Example

5.1 The rivers Zuari and Mandovi originate from the Digwi and Jambotic Ghats and the catchment areas are respectively 995 and 2000 sq. km. The rivers are the two important rivers of the Union Territory of Goa, Daman and Diu. Navigation, fisheries, irrigation, source for drinking water and harbour are the beneficial uses identified for different stretches of the rivers. The details of the classification of the rivers are furnished in Table 5.1 and illustrated in Map 5.1.

5.2. The river Cauvery originates in the State of Karnataka, traverses through the States of Karnataka and Tamil Nadu before joining the Bay of Bengal. The river is one of the fourteen major rivers and the maximum utilized. The main uses are for irrigation and drinking water source. There are a number of infiltration works along the river which serve as source for drinking water supply after disinfection. The details of the classification of the river are furnished in Table 5.2 and illustrated in Map 5.2.

5.3 The river Yamuna is a tributary to the river Ganga and is an inter-State river. The river originates at Yamunotri and joins the river Ganga at Allahabad. The catchment areas for the river is 345848 sq. Km. The important tributaries of the river are also classified and the details of classification furnished in Table 5.3, and illustrated in Map 5.3.

TABLE 4.1

PRIMARY WATER QUALITY CRITERIA FOR CLASS A WATER

CRITERIA	RATIONALE
1. Total coliform organisms MPN/100 ml shall be 50 or less	To achieve the drinking water standard of total coliform organisms MPN equal to one/100 ml at the normal expected efficiency of 99% kill during chlorination
Note: If MPN count is noticed to be more than fifty then regular tests should be carried out. The criteria would be satisfied if during a period of time not more than 5% of the samples show greater than 200 MPN/100 ml and not more than 20% of samples show more than 50 MPN/100 ml.	The variations are suggested to allow for fluctuation in environmental conditions such as seasonal change, changes in flow condition etc.
2. pH between 6.5 and 8.5	The range provides adequate protection to the life of freshwater fish and bottom dwelling invertebrate fish food organisms. The range also ensures protection of distribution system from corrosion and noniterference with disinfection
3. Dissolved oxygen : 6 mg/1 or more	The minimum dissolved oxygen concentration of 6 mg/l reflects complete freedom from oxygen consuming organic pollution upstream and ensures good fish population, low bacteria content, moderately densely colonized chiefly by algae, mosses, flat worms and insect larvae in the water body
4. Biochemical Oxygen demand 5 day 20°C : 2 mg/1 or less	The Biochemical Oxygen Demand of 2 mg/1 or less of the water ensures that the water is almost pure. (Pure water has a Biochemical Oxygen Demand on one mg/1)

Note : There shall be no visible discharge of domestic and industrial wastes into Class A waters.

TABLE 4.2

PRIMARY WATER QUALITY CRITERIA FOR CLASS B WATER

CRITERIA	RATIONALE
1. Total coliform organisms MPN/100 ml shall be 500 or less	To ensure low sewage contamination. Coliform organisms of animal origin may contribute to a significant portion of the criterion MPN/100 ml equal to 500 or less. The balance is expected to ensure enough dilution of sewage discharged, if any, into the water body
Note : If MPN count is noticed to be more than 500 MPN/100 ml then regular tests should be carried out. The criteria would be satisfied if during a period of time not more than 5% of the samples show greater than 2000 MPN/100 ml and not more than 20% of samples show greater than 500 MPN/100 ml.	The variations are suggested to allow for fluctuation in environmental conditions such as seasonal change, changes in flow condition etc.
2. pH between 6.5 and 8.5	The range provides protection to the life of freshwater fish and bottom dwelling invertebrate fishfood organisms
3. Dissolved oxygen : 5 mg/1 or more	The minimum dissolved oxygen concentration of 5 mg/1 ensures reasonable freedom from oxygen consuming organic pollution immediately upstream and good fish population and colonization mostly by a large variety of species and strains of the waterbody
4. Biochemical Oxygen demand 5 day, 20°C : 3 mg/1 or less	The Biochemical Oxygen Demand of 3 mg/1 or less of the water ensures reasonable freedom from oxygen demanding pollutants

Note : All domestic and industrial wastewater discharges upstream of bathing places shall be so regulated that the stream standards are maintained and that there is no visible floating matter including oils at the bathing places.

TABLE 4.8

PRIMARY WATER QUALITY CRITERIA FOR CLASS C WATER

	CRITERIA	RATIONALE
1.	Total coliform organisms MPN/100 ml shall be 5000 or less.	To achieve the drinking water standard of total coliform organisms MPN/100 ml equal to one at the normal expected efficiency of 99.98% kill during conventional treatment and chlorination
	Note : If MPN count is noticed to be more than 5000 MPN/100 ml then regular tests should be carried out. The criteria would be satisfied if during a period of time not more than 5% of the samples show greater than 20,000 MPN/100 ml and not more than 20% of samples show greater than 5000 MPN/100 ml.	The variations are suggested to allow for fluctuation in environmental conditions such as seasonal change, changes in flow condition etc.
2.	pH between 6 and 9	The range ensure prevention of corrosion in treatment plant and distribution system and noninterference in coagulation and chlorination in the water treatment plant
3.	Dissolved oxygen : 4 mg/1 or more	The minimum dissolved oxygen concentration of 4 mg/1 reflects freedom from acute oxygen consuming organic pollution upstream of the water body and result in very large variety of species and densely colonized by individual algae, snails, entomostracans, insect larvae, aquatic plants cover large areas, fertile fishing waters
4.	Biochemical Oxygen demand 5 day, 20°C : 3 mg/1 or less	The Biochemical Oxygen Demand of 3 mg/1 or less of the water ensure reasonable freedom from oxygen demanding pollutants

Note : All domestic and industrial wastewater discharges into Class C waters shall necessarily be treated to ensure maintenance of stream standards and the discharge points shall be kept sufficiently away from the abstraction points.

TABLE 4.4

PRIMARY WATER QUALITY CRITERIA FOR CLASS D WATER

CRITERIA	RATIONALE
1. pH between 6.5 and 8.5	The range provides adequate protection to the life of freshwater fish and bottom dwelling invertebrate fish food organisms, although the toxicity of other poisons may be affected by changes within this range
2. Dissolved oxygen : 4 mg/1 or more	The minimum dissolved oxygen to maintain good fish population is 4 mg/1 resulting from very large variety of species and densely colonized by individual algae, snails, entomostracons, insect larvae, aquatic plants covering large area
3. Free Ammonia (as N) : 1.2 mg/1 or less	The toxicity range of unionized ammonia to fish is between 0.2 mg/1 to 2 mg/1 depending upon the species. The value of 1.2 mg/1 is the often suggested limit

TABLE 4.5

PRIMARY WATER QUALITY CRITERIA FOR CLASS E WATER

CRITERIA	RATIONALE
1. pH between 6.0 to 8.5	In practice it is seen that plant can grow well within this pH range. Though it depends on the types of crops and soils also. Beyond this range crop growth is disturbed and yield becomes low
2. Electrical conductivity at 25°C/μmho/cm : Max : 2250	The electrical conductivity (EC) gives an idea of the salinity and is related to salt concentrations. The irrigation water having EC value up to 2250 μmho/cm at 25°C can be used safely as an irrigant (Refer Appendix II) but beyond this limit the salinity may effect reduction in vegetative growth, number, size and qualiiy of fruits, leaf permeability as well as yield. Beyond this limit water can be used for some salt resistant crops after careful management practices provided the salt condition is suitable
3. Sodium Absorption Ratio, Max : 26	Sodium Absorption Ratio (SAR) is a better guide to judge the sodium hazaros of irrigation water than the relative concentration of the sodium ions. In classifying irrigation water it is assumed that water will be used under average conditions with respect to climate, soil, method of irrigation and salt tolerance of crops
4. Boron, Max : 2 mg/1	Boron is an essential nutrient for plant growth; it becomes toxic beyond 2 mg/1 in irrigation water for most of the field crops. It does not affect the physical and chemical properties of the soil but at high concentrations it affects the metabolic activities of the plant

Note : See Appendix II.

TABLE 5.1

CLASSIFICATION OF THE RIVERS ZUARI, MANDOVI AND THEIR TRIBUTARIES

Sl. No.	Stretch Description	Designated Best Use Classification	Basis for the Classification in 3
1	2	3	4
	Zuari River		
1.	From origin to Siluai Dam	A	The stretch is in forest area and the water is of pristine quality. The water quality should be maintained at that level and should not be allowed to deteriorate
2.	Downstream of Siluai Dam upto Govarium in the river Kushavati and Sanguem in the river Ugem & Zuari	C	The present water quality and future possible use for water supply after treatment and disinfection
3.	Downstream of Govarium and point of confluence of Cumbarjua Canal with Zuari	SW II	The stretch is estuarine and commercial fishing is the best use
4.	From confluence point of Cumbarjua Canal upto Arabian Sea	SW IV	The stretch is estuarine and Margao harbour is situated in the stretch
	Kushavati, tributary to Zuari River		
1.	From starting point to downstream of Quepem	C	Present water quality and possible future use for water supply after treatment and disinfection
2.	From downstream of Quepem to its confluence with Zuari river	SW II	Saline water and commercial fishing is the best use
	Mandovi River		
1.	From starting point where it is called Mahadari and then Madri upto its confluence with Ragada and northern boundary of Nirankal	C	Present water quality and possible future use

Sl. No.	Stretch Description	Designated Best Use Classification	Basis for the Classification in 3
1	2	3	4
2.	From point of confluence with River Ragada upto Arabian Sea	SW II	Saline water and commercial fishing is the best use
	Ragada, tributary to Mandovi River		
1.	From starting point to its confluence with Mandovi river	C	Present water quality and possible future use
	Khandepar, tributary to Mandovi River		
1.	From starting point includiug Dudhsagar river & Kali Nadi upto Opa Weir	C	The stretch serves as the source for public water supply after treatment and disinfection
2.	From downstream of Opa Weir to its confluence with Mandovi river	SW II	Saline water and commercial fishing is the best use
	Cumbarjua Canal, connecting the rivers Zuari and Mandovi		
1.	Whole stretch	SW II	Saline water and commercial fishing is the best use

Annexure K

APPENDIX VI : CATEGORISATION OF INDUSTRIES

GOVERNMENT OF GOA
DIRECTORATE OF INDUSTRIES, TRADE & COMMERCE

Notification

3/40/2003-IND(XV)

Whereas vide Notification No. 1/49/2000/S (IND)/Vol.II dated 4.8.2003, published in the Official Gazette, Extraordinary No.4 Series I No. 18 dated 6.8.2003, the Government of Goa notified the Goa Industrial Policy, 2003 (hereinafter referred to as the "said Policy").

Now, in pursuance of "said Industrial Policy" the Government of Goa is pleased to classify the industries as under:-

RED CATEGORY

Following Manufacturing industries are classified under Red category

1. Fertilizer (Basic) (excluding formulation)
2. Pulp & paper (paper manufacturing with or without pulping)
3. Chlor alkali
4. Dyes and Dye-intermediates
5. Pesticides (Technical) (excluding formulation)
6. Petrochemicals (manufacturing of and not merely use of as raw material)
7. Synthetic rubber
8. Industrial Carbon including electrodes and graphite blocks , activated carbon, carbon black, etc
9. Pigments and intermediates
10. Synthetic resins
11. Petroleum products involving storage, transfer or processing
12. Lubricating oils, greases or petroleum-based products
13. Manufacturing of Granules, Synthetic fibre including rayon, tyre cord, polyester filament yarn
14. Surgical and medical products involving prophylactics and latex
15. Chemical, petrochemical and electrochemical including manufacturing of acids such as Sulphuric Acid, Nitric Acid, Phosphoric Acid, etc
16. Chlorates, perchlorates and peroxides
17. Glue and gelatine
18. Vegetable oils including solvent extracted oils, hydro-generated oils
19. Asbestos and asbestos-based industries
20. Steel and steel products including coke involving use of any of the equipments such as blast furnaces, open hearth furnace, induction furnace or arc furnace, etc or any of the operation or process such as heat treatment, acid pickling, rolling or galvanizing, etc
21. Lime manufacturing
22. Tobacco products including cigarettes and tobacco processing
23. Coal liquefaction, coal tar distillation or fuel gas making

24. Phosphorous and its compounds
25. Explosives including detonators, fuses, etc
26. Fire Crackers other than cottage industries
27. Chlorine, fluorine, bromine, iodine and their compounds
28. Hydrocyanic acid and its derivaties
29. Ceramic/refractories
30. Manufacturing of Mirror from sheet glass
31. Sugar (Excluding Khandsari)
32. Coke Making

Following Processing and/or Servicing industries are classified under Red category

1. Oil refinery (Mineral Oil or Petro refineries)
2. Tanneries
3. Zinc smelter
4. Copper smelter
5 Alluminum smelter
6. Yarn and Textile processing involving scouring, bleaching, dyeing, printing or any effluent/emission generating process
7. Dry coal processing
8. Phosphate rock processing plants
9. Coal liquefication, coal tar distillation or fuel gas making
10. Processes involving chlorinated hydrocarbons
11. Anodizing
12. Lead Processing
13. Distilling industry fragmentation
14. Thermal power plant
15. Iron & Steel (Involving processing from ore/scrap/Integrated steel plant.

ORANGE CATEGORY

Following Manufacturing industries are classified under Orange Category

1. Cement
2. Tyres & tubes Vulcanisation /Retreading /moulding
3. Paints and varnishes (excluding blending /mixing)
4. Khandsari sugar
5. Glass and fiber glass production and processing
6. NPK Fertilizer /Granulation.
7. Fermentation industry including manufacture of yeast, beer, etc
8. Pesticides/Insecticides/Fungicides/Herbicides/Agrochemical formulation.
9. Industry or process involving foundry operations
10. Potable Alcohol (IMFL) by blending or distillation of alcohol.
11. Pharmaceutical (bulk drugs)

Following Processing and/or Servicing industries are classified under Orange categ

1. Incineration plant
2. Power Generating Plant (excluding D.G. set)

3. Stone crushers
4. Laboratory chemicals involving distillation, purification process
5. Glass and fiber glass production and processing
6. Industry or process involving metal treatment or process such as picking, surface coating, paint baking, paint stripping, heat treatment, phosphating or finishing, etc.
7. Fermentation industry including manufacture of yeast, beer, Etc
8. Distillery (excluding fermentation industry)
9. Slaughter houses and meal processing units.
10. Industry or process involving electroplating operation

SPECIFIED ORANGE CATEGORY

Following Manufacturing industries are classified under Specified Orange Category

1. Synthetic detergent & soap
2. Industrial or inorganic gases
3. Malted food
4. Non-alcoholic beverages (soft drinks)
5. Fragrances and industrial perfumes
6. Food addictives, nutrients and flavors
7. Manufacturing of wines
8. Photographic films and chemicals
9. Pulping and fermenting of coffee beans
10. Water softening and demineralised plants

Following Processing and/or Servicing industries are classified under Specified Orange category:

1. Instant tea/coffee, coffee processing
2. Hotel and Restaurants

GREEN CATEGORY

Following Manufacturing industries are classified under Green category:-

1. Pharmaceutical Formulation (Injectables and tablets)
2. Bakery Products, Biscuits, Confectionery
3. Ice-cream or Ice –making
4. Tailoring and garments making
5. Cotton and woolen hosiery
6. Apparel making
7. Handloom weaving
8. Shoelace manufacturing
9. Gold and Silver smithy
10. Leather footwear and leather products excluding tanning and Hide processing
11. Musical instruments manufacturing
12. Sports goods
13. Bamboo and cane products (only dry operation)
14. Cardboard or corrugated box and paper products (Paper or Pulp manufacturing excluded)

15. Insulation and other coated papers (Paper or pulp Manufacturing excluded)
16. Scientific and Mathematical instruments
17. Furniture (Wooden and steel)
18. Assembly of domestic electrical appliances
19. Radio assembling
20. Fountain pens
21. Ropes (Cotton, Fishnet and Synthetic)
22. Carpet Weaving
23. Assembling of air coolers, conditioners, refrigerators and other Home appliances
24. Assembling of bicycles, baby carriage and other small non- Motorized vehicles
25. Electronics equipments (Assembling)
26. Toys
27. Paint (by mixing process only)
28. Candles
29. Carpentry (excluding saw mill)
30. Oil ginning/expelling (no hydrogenation/refining)
31. Jobbing and machining
32. Manufacture of steel trunks and suitcases
33. Paper pins and U-clips
34. Block making for printing
35. Optical frames
36. Power looms/handlooms (without dyeing & bleaching)
37. Printing Press
38. Garments stitching, tailoring
39. Thermometer making
40. Footwear (rubber)
41. Plastic processed goods and goods manufactured from garments like nylon, plastic, polyesters, PVC by process of moulding and /or extrusion including filaments and fiber
42. Medical and surgical instruments
43. Electronic and electrical goods
44. Rubber goods industry
45. Light engineering involving pressing and machining Operation
46. Manufacturing and assembling of D. G. sets
47. Manufacturing and assembling of computer and computer Peripherals
48. I.T. industries.
49. Cotton spinning and weaving
50. Flour Mill (excluding domestic Aata chakki
51. Organic Nutrients
52. Surgical and Medical products not involving effluents/emission Generating process
53. Laboratory - ware
54. Wire drawing (cold process) and bailing straps
55. Atta chakkies
56. Rice mullors

57 Steeping and processing of grains

58 Mineralised water

59 Dal mills

60. Groundnut Decorticating (Dry)

61. Supari (betelnut) and masala grinding

62. Gold and Silver thread zari work

63. Pulverizing.

Following Processing and/or Servicing industries are classified under Green category

1. Milk Processing and Dairy products (Integrated project)
2. Food including fruits and vegetables processing
3. Fish processing
4. Chilling plant and Cold Storages
5. Leather footwear and leather products excluding tanning and hide processing
6. Jobbing and machining
7. Automobile servicing and repairs stations.

Note: Any Industry/industrial activity which do not fall under any of the above mentioned four categories (i.e. Red, Orange, Specific Orange and Green),decision with regards to their categorization/classification, will be taken by the Government from time to time when such need arises either suo moto or on the specific request by the Industrial unit or Industrialist. (Industrial unit or Industrialist may apply to the Director of Industries in this respect for necessary action)

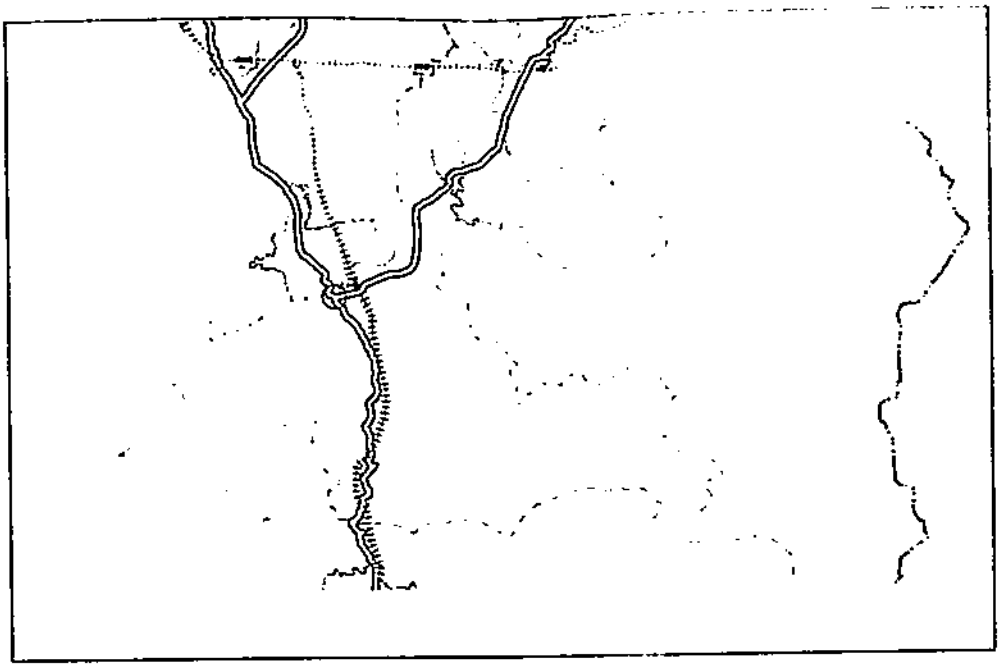
This issues after considering the guidelines/suggestions given by the Goa State Pollution Control Board and Department of Science, Technology and Environment.

By Order and in the name of the
Governor o f Goa

Smt. Jayshree Raghuraman,
Secretary (Industries)
Panaji, 25th November, 2004.

Annexure C

Extract from Draft Regional Plan for Goa - 2021



Sketch Map D: Likely Location of Quepem Hub

3.7.4. POLICIES AND SPATIAL CONTROLS

a. Since locals are not attuned to jobs involving manual labour, it is important to encourage industrial sectors that match the local skill sets of the population like health, pharma, education etc. which are also relatively "clean". Promotion of a particular sector has to be done only after a proper assessment of the available human resources so that available jobs can be taken up by locals.

b. Potential industries that can be recommended in RPG- 21 are:

   i) Industries that are non-polluting, clean and non-power guzzling.

   ii) Industries that offer jobs that match the skills of local population. Areas like health. Pharma, education etc. are to be encouraged

   iii) Natural resource based industries: Agro-based fruit and food processing, live-stock based units like dairy and meat products, cattle feed, marine-based processing units. However mineral based industries have to be carefully chosen on the basis of environmental impact before deciding on any of them.

   iv) Green technology industries

   v) Cottage and rural industries

   vi) Handicrafts industries

c. Apart from the existing acquired lands for industrial purpose, the TF approves of proposed contiguous extensions of existing Industrial estates as indicated by GIDC. All fresh acquisition proposals by GIDC will have to be relooked with reference to the indications

of growth centres in the Regional Plan. With this in mind the TF rejects the following proposals of GIDC :

1. Loliem	51,80,255 sq.m
2. Loliem	40,91,475 sq.m
3. Poinguinim	30,000 sq.m
4. Quepem	8,83,576 sq.m
5. Cuncolim	17,03,250 sq.m
6. Mormugao	13,49,500 sq.m
7. Melauli, Sattari	13,81,225 sq.m
8. Pilerne	1,71,050 sq.m
9. Alorna, Pernem	40,94,450 sq. m

d. The Task Force opposes the current practice of acquiring land and proposing Industrial Estates along the coastal belt (as was being proposed at Loliem and as acquired at Quitol) or in forest areas (Alorna, Melauli) or in undevelopable slopes (Cuncolim) as these are clearly incompatible uses.

e. The Task Force would recommend industries in green category in most industrial estates. Industries pertaining to orange category should be located at certain industrial estates where adequate pollution and hazardous waste management facility should be made available.

f. Since Task Force has laid an emphasis on preserving of agricultural land like paddy fields, khazan lands, etc. and slopes where cashew and other horticulture can be practiced, it is but natural that agro based fruit and food processing industry is given a boost by the Government. This would engage people in both agricultural as well as food processing sectors and would ensure self-employment in midland as well as Ghat talukas. Analyzing the data available, it can be safely assumed that Goa has an advantage to be an excellent food processing and beverage processing area, which goes with the social climate of the State. The Task Force recommends that this industry at a rural level be promoted on a mission mode.

g. Government is in the process of identifying industries, which can be promoted as clusters. Identification of cashew processing industry, terracotta, gold jewellery and pharma industry as cluster industries would help promote local entrepreneurs as well as provide employment in the interior of the State. Positive interventions, both soft and hard in nature should be made in these sectors immediately and incentives to be provided to such cottage/rural/ handicraft industries.

h. Any further industries being set up should be sited according to the Guidelines for Siting of Industries issued by the Goa State Pollution Control Board (Feb 2007).

i. Task Force has earmarked certain economic growth centres based on these guidelines and considering existing and newly proposed infrastructure. The Task Force would recommend relocation of certain proposed industrial estates and acquisition of the GIDC to be concentrated in the new areas earmarked for new growth centers after preparation of proper plans taking into consideration all points enumerated herein by the Task Force. At the intersections of proposed new rail and road networks, (see transportation Chapter 5.1) and considering the influence of the proposed new international airport at Mopa, growth will occur in a natural and organic fashion -because such intersections offer the greatest connectivity. These new centres will deflect investment from the already crowded coastal